

Addressing School Safety through Comprehensive School Climate Approaches

Catherine P. Bradshaw

University of Virginia

Jonathan Cohen

Teachers College, Columbia University

Dorothy L. Espelage

University of North Carolina at Chapel Hill

Maury Nation

Vanderbilt University

Bradshaw, C. P., Cohen, J., Espelage, D. L., & Nation, M. (2021). Addressing School Safety Through Comprehensive School Climate Approaches. *School Psychology Review*, 50(2–3), 221–236.
<https://doi.org/10.1080/2372966X.2021.1926321>

Published in *School Psychology Review*

Funding: The research reported here was supported in part by the Institute of Education Sciences, U.S. Department of Education, through Grant R305H150027 (PI: C. Bradshaw) to the University of Virginia. The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education or the Maryland State Department of Education.

Addressing School Safety through Comprehensive School Climate Approaches

Abstract

School climate has received considerable attention in the literature and educational policy as a potential target for school improvement and school safety efforts. This paper provides a critical review and synthesis of the literature on school climate, with a particular focus on topics related to measurement, data collection, analysis, as well as prevention and promotion planning. In drawing upon the extant literature, including meta-analyses and systematic reviews, along with our own research, policy, and practice work in school climate and school safety, we consider transactional processes, by which experiences, and contextual factors influence perceptions of school climate and translate into safety related outcomes for students. We also attend to potential mechanisms of changing school and community culture and behavioral norms in relation to school climate promotion and implementation efforts. We conclude by identifying future directions for research related to school climate and highlight the role school psychologists can play in improving measurement, promoting the use of data-based decision making which leverages various sources of information on school climate, implementing school-wide programming, and considering the influence of school climate more broadly on implementation science.

Key Words: School Climate, School Safety, Evidence-based Programs, Prevention

Impact Statement: School climate is a multifaceted construct which incorporates issues related to safety, student engagement, and the school environment. While additional research is needed to determine the most effective approaches for optimizing school climate, there is compelling correlational and experimental evidence that it is an important factor to consider in a comprehensive approach to school safety.

Addressing School Safety through Comprehensive School Climate Approaches

A robust body of research has documented links between school climate and a range of positive academic and behavioral outcomes for students (e.g., Thapa et al., 2013; Wang & Degol, 2016). As such, it has become a common target for school improvement and school safety efforts (Cohen & Thapa, 2017). There also has been growing attention to the issue of school climate in practice, programming, and policy, as illustrated by its inclusion in the 2015 federal *Every Student Succeeds Act* (ESSA, 2015). Under ESSA, states are expected to collect data on school quality and student success, providing a unique opportunity for informing school practices and improving conditions for learning at a national level. Yet there is much to learn about efficient school climate data collection and use, and its relation to school-based programming more generally. School psychologists and other school leaders need guidance on how the extant information on school climate can be used to improve local conditions and inform the use of school-wide and more targeted prevention and intervention efforts. At a time when issues such as school safety and student engagement top the list of educational concerns, many benefits may be realized from taking a more integrated approach to programming related to climate and safety.

The overarching goal of this paper is to critically review and synthesize the literature on school climate, with a particular focus on the role school climate plays as a critical target for school improvement and school safety efforts. In conducting this review, we have drawn upon the extant literature, including meta-analyses and systematic reviews, as well as our own research, policy, and practice work in school climate and school safety. Although school safety is typically conceptualized as a part or a component of school climate, we were especially interested in the extent to which efforts aimed at improving school climate could actually translate into safety-related outcomes, from both a causal and correlational perspective.

Through this review, we advocate for the careful consideration of the role that school climate plays in relation to school safety, diversity and equity issues, mental and behavioral health, and academic achievement (Flannery et al., 2019), as we believe that school climate is central to improving these related outcomes. Toward that end, we review the state of the research on school climate, which we conceptualize as a complex, broad, and multifaceted construct that draws upon a variety of cultural, contextual, perceptual, and behavioral factors. We highlight the role school psychologists and other educational leaders can and should play in school climate promotion efforts. This paper contributes to both science and practice, and advances them by synthesizing and analyzing the extant literature with a particular focus on implications and recommendations for future research and practice. Given the complexity and multifaceted nature of this construct, we begin with a brief review of various aspects of its definition and composition in relation to school and student safety outcomes.

Complexities Associated with Defining School Climate

Educators and researchers have come to realize over the last four decades that complex sets of systemic, instructional, and relational elements make up the quality and character of school life or “school climate” (Anderson, 1982; Cohen, 2017; Cohen et al., 2009; National School Climate Council, 2015; Thapa et al., 2013). A challenge to the field, however, has been the lack of a single universally agreed-upon definition of school climate. Practitioners and researchers often use a range of terms to characterize school climate, including atmosphere, feelings, tone, ethos, occupational health, organizational health, setting, milieu, culture, and conditions for learning. Some have focused on the “subjective” nature of school climate, as compared to an “objective” facet of school life (see Thapa et al., 2013). Given that perceptions play a critical role in influencing behavior, and thus are often realized in terms of their

consequences on behavior, the perceptual aspects of school climate typically play a more central role than objective elements of the school (O'Brennan & Bradshaw, 2017). Moreover, some have advocated for a top-down approach emphasizing school-level attributes and the role or perspectives of school leaders, whereas others have placed greater emphasis on giving voice and weight to students' perspectives. Such differences in perspectives often necessitates triangulation or examination of school climate insights from multiple perspectives (Bottiani et al., 2020).

A commonly cited definition of school climate is “the quality and consistency of interpersonal interactions within the school community that influence children’s cognitive, social and psychological development” (Haynes et al., 1997, p. 322). Other early work by Hoy and colleagues focused on a related concept of organizational health (e.g., Hoy & Feldman, 1987), whereas work by Bryk and others helped researchers develop a deeper understanding of both the methodological and conceptual issues associated with investigating the impacts of school context (see Bryk et al., 2010). More recently, the National School Climate Council (2007, page 5; see also 2012, 2015) characterized school climate as “the quality and character of school life and reflects norms, goals, values, interpersonal relationships, teaching, learning and leadership practices, and organizational structures.” Virtually all of these models are grounded in the understanding that school climate reflects systems and group trends rather than any one person’s experience.

Given the increased interest in school climate, it is not surprising that several different models or “camps” have emerged in recent years (Cohen, 2017). Many of these models have expanded the focus of school climate beyond the interpersonal and relational aspects of climate to directly incorporate issues related to safety, support, and engagement (for a review see Osher & Berg, 2017). In an effort to unify the field, the U.S. Department of Education (US DOE, 2016)

put forth a model of school climate which “reflects how members of the school community experience the school, including interpersonal relationships, teacher and other staff practices, and organizational arrangements. School climate includes factors that serve as conditions for learning and that support physical and emotional safety, connection and support, and engagement” (p. 1). The US DOE model focuses on three facets or core aspects of school climate: safety, engagement, and the environment.

U.S. Department of Education’s Model of School Climate

The US DOE model of school climate has become the most commonly used one in the United States today. Moreover, it has helped to delineate a set of key tasks that define an effective and iterative improvement process, including planning, data collection, engaging stakeholders (e.g., educators, students, parents/guardians, community members), implementing, and then evaluating improvement efforts (US DOE, 2016). School leaders are encouraged to use validated school climate surveys that recognize student, parent, and school personnel “voice” about a range of safety, relationships/engagement, teaching and learning, and environmental issues (see National School Climate Council, 2009, 2012, 2015).

To help advance and support adoption of this three-factor model of school climate, the US DOE funded the National Center of Safe Supportive Learning Environments, which has in turn developed and made available a range of free surveys and detailed guidelines to support building and district-wide school climate improvement efforts (<https://safesupportivelearning.ed.gov/edscls>). Moreover, schools are encouraged to use school climate survey data to engage school community members and leverage their intrinsic motivation to be co-leaders in an iterative school climate improvement process. It is also important to recognize the nested nature of school climate data and the multilevel aspects of school climate

and its measurement (e.g., Konold, 2018; Marsh et al., 2012). There has been growing empirical support for and endorsement of the US DOE's three factor conceptualization of school climate, and thus we advocate for the use of this broad yet efficient approach to school climate. For example, a number of psychometric studies have validated the model and its measurement (see Bradshaw et al., 2014), including studies that document measurement invariance across race/ethnicity, gender, and grade level (e.g., Lindstrom Johnson, et al., 2019; Shukla et al., 2019; Waasdorp et al., 2019). Moreover, there is strong support for convergent validity with other indicators of school climate, including safety, engagement, and the environment (Bottiani et al., 2020; Lindstrom Johnson et al., 2019; Waasdorp et al., 2019). Taken together, we believe that there is compelling evidence in support of the US DOE's three-factor model of school climate and thus believe it holds great promise for unifying the field and its approach to conceptualizing and potentially improving school climate.

Exploring the Link between School Climate and School Safety

Over the last two decades, there has been significant and growing interest in school climate improvement efforts in the U.S. and around the world (Berkowitz et al., 2017; Cohen & Espelage, 2020a; Larson et al., in press). From a public health perspective, there is acknowledgement of the importance of school climate by federal agencies, such as the Centers for Disease Control and Prevention (2009), which have recommended focusing on school climate in an effort to promote healthy relationships and school connectedness, enhance school safety, and improve student outcomes (e.g., reducing dropout rates and mental health problems). Other federal agencies (e.g., National Institute of Justice, US DOE) have allocated considerable funding to address school safety through school climate promotion, as well as specific school-based models, such as Positive Behavioral Interventions and Supports (PBIS) and social and

emotional learning (SEL), which have become increasingly focused on and informed by school climate over the last two decades.

The assumption underlying these efforts is that school climate is functionally and directly related to school safety and other positive indicators of student success, and inversely related to problem-focused outcomes. Importantly, much of the emphasis on school climate has been predicated on correlational, rather than causal, research suggesting it is connected to a range of behavioral, academic, and violence outcomes (for further exploration of this issue see Benbenishty et al., 2016; Berkowitz et al., 2017; Thapa et al., 2013; Wang & Degol, 2016). For example, school climate has been positively associated with multiple positive behavioral outcomes such as academic achievement, but also inversely related to a number of negative behavioral indicators, like absenteeism, truancy, dropout, suspension, drug use, and aggressive behavior (see Benbenishty et al., 2016; Berkowitz et al., 2017; Thapa et al., 2013; Wang & Degol, 2015).

A related line of research has shown that students' perceptions of connectedness to each other, to teachers, as well as to the school more broadly are associated with fewer behavioral disruptions in the classroom and less bullying (see Steffgen et al., 2013; Thapa et al., 2013). Conversely, students who feel a greater connection to school are more willing to help other students who are experiencing bullying or other forms of aggression (Barhight et al., 2017; Espelage et al., 2014; Waasdorp et al., 2011). Scholars have consistently found that classroom practices, teacher attitudes, and the broader school environment all play a critical role in promoting school connectedness and positive perceptions of physical and emotional safety, while also serving as protective factors for youth who experience violence outside of school (CDC, 2009; Espelage et al., 2014)

When it comes to the research on climate and school safety more specifically, one faces a bit of a tautological challenge, given that climate often includes safety. As such, it has been common to explore negative indicators of safety, such as school violence and delinquency (see Wang et al., 2020). For example, recent meta-analyses highlight significant associations between school climate and various indicators of school violence. One such study by Steffgen et al. (2013) examined 36 cross-sectional studies; they reported a moderate effect size ($r = -.26$) between school climate and school violence, which they defined as “a wide range of behaviors that threaten and harm others emotionally and physically: ranging from intentional physical attacks including the use of weapons, gang violence and sexual assaults, to less serious behaviors like beating and slapping, to relatively harmless kicks and punches” (Steffgen et al., 2013, p. 300). Their findings on school violence were generally consistent across the multiple school climate dimensions assessed, including relational (e.g., school belonging), cognitive-affective (e.g., school fear), and organizational (e.g., school management, school security).

In a more recent meta-analysis, Reaves et al. (2018) reported on cross-sectional and longitudinal associations among school climate indicators and in relation to various forms and indicators of “problem behavior” across 13 studies. They argued that a focus on school climate in relation to “other types of disruptive behaviors, such as general maladaptive behavior, delinquency, aggression, and violence within and outside of school” was critical for informing the field and the use of school climate promoting programming; they systematically summarized and synthesized the school climate literature in relation to “problem behavior,” which they defined as an “umbrella term for disruptive, antisocial, delinquent, or externalizing behavior toward another person (aggression, weapon use, violence) or another person's property (stealing, vandalism) to account for a spectrum of behaviors” (Reaves et al., 2018, p. 101). The strongest

associations found were between two dimensions of school climate – safety and interpersonal relationships – and self-reported delinquency, respectively ($r_s = -.25, -.21$). Institutional environment (e.g., school connectedness, school environment) significantly predicted all forms of problem behaviors that serve to compromise school safety for all school members (e.g., delinquency, school delinquency, violence perpetration, conduct disorders; $r_s = -.14$ to $-.29$). Together, these meta-analytic studies and other findings (e.g., Thapa et al., 2013) provide compelling evidence that school climate, including institutional environment, is an important correlate of various indicators of school violence and problem behaviors.

Some, however, may question the strength of these associations and the extent to which these associations are causal. Moreover, the specific mechanisms and directionality by which school climate translates into these wide-ranging school safety outcomes are not well understood (for exploration of this issue, see Benbenishty et al., 2016; Berkowitz et al., 2017). The theoretical underpinnings of school climate provide some insight on the theory of change process. For decades, theories such as social control theory, social learning theory, and social-ecological frameworks have situated schools as an important contextual influence on student behavior. Schools provide youth with the environment, interpersonal relationships, and academic instruction to regulate their own behaviors and form strong connections with others that deter the development of aggression and other deviant behaviors that compromise school safety (Hirschi, 1969), as well as promoting health and wellbeing. More specifically, social control theory posits that individuals with a stronger bond to communities (e.g., family, school) are less likely to engage in deviant or criminal behavior (Hirschi, 1969; Wiatrowski et al., 1981). Schools are social institutions which can promote a sense of attachment, a social bond, and personal commitment to engage in prosocial behaviors and to deter engagement in aggression and/or anti-

social, rule-breaking behaviors (Hirschi, 1969). Schools can also be a place where aggression and violence are modeled and promoted on one hand, but on the other hand, could be a place where youth who experience violence outside of school learn prosocial behaviors.

Gregory and Cornell (2009) further theorized that much like the authoritative parenting style, schools that set both high expectations for behavior (e.g., rules and consequences) as well as warm support (e.g., connectedness) reduce the likelihood that students will violate school rules and be more likely to seek out help for themselves and others when they encounter problems. When students experience a positive school climate, problematic behaviors are minimized through the promotion of safe environments and supportive/positive relationships, facilitated through classroom- and school-wide norms that support safety and promote respectful interactions among students and staff (Cohen, 2017). Additionally, if students have a positive perception of the school climate, they are less likely to engage in externalizing or aggressive behaviors (Espelage et al., 2014; Steffgen et al., 2013; Tatura et al., 2009).

In summary, the association between school climate and school safety is complex in several ways. Although there is not one agreed upon definition of school climate, virtually all focus on systems or the patterns of student, parent/guardian, and school personnel experiences (e.g., norms, goals, values, practices and organizational structures). Safety is a foundational component in virtually all school climate models, and we are only just beginning to understand how school climate and school safety influence one another in a bi-directional manner. This issue is further complicated by the fact that there is not one agreed upon indicator of school safety, as many default to negative indicators (e.g., violence; see for example Wang et al., 2020), thereby implying that the *lack* of violence means individuals are or feel safe. For example, the National Center on Safe Supportive Learning Environments characterized school safety as

“schools and school-related activities where students are safe from violence, bullying, harassment, and substance use” (<https://safesupportivelearning.ed.gov/topic-research/safety>).

This definition of safety overlaps with and reinforces the primary focus of school safety research and program on preventing problems like bullying, substance abuse, and school shootings, rather than improving the social, emotional and civic aspects of safety (Cohen & Espelage, 2020). We contend that there is a need for considering a school climate in relation to a much broader spectrum of experiences that undermine students feeling and being safe, from normative moments of misunderstanding and conflict to microaggressions, along with sexual harassment and dating violence, as well more extreme acts, including homicide (Cohen & Espelage, 2020).

Approaches for Assessing School Climate

A number of different approaches have been developed to measure school climate, yet the approach used to assess it may and often do lead to different conclusions. Further complicating this issue is the diversity of and various sources of information on school climate. Most school climate measurement practices have focused largely on school climate surveys that generally recognize student, parent/guardian and school personnel perceptions about a range of safety, engagement/relationship, teaching and learning and environmental issues. However, much of the empirical work is based on student reports (see Bottiani et al., 2020; Thapa et al., 2013; Waasdorp et al., 2011; Wang & Degol, 2016). Even within student populations, there are some important differences in perceptions of school climate not attributable to construct measurement (Lindstrom Johnson et al., 2019; Waasdorp et al., 2019). For example, high schoolers tend to rate their school climate less favorably than middle schoolers (Waasdorp et al., 2019). Similarly, Black students tend to feel less connected and less safe compared to their White peers (Bottiani et al., 2016a, 2016b). Moreover, both Black and White students are

concerned about and impacted by issues of inequity and racism in schools (Debnam et al., 2014), particularly regarding the disproportionate use of discipline strategies and feelings of connectedness (Bottiani et al., 2016a, 2016b; Fan et al., 2011). There is also growing interest in several issues related to equity and school climate, especially in relation to gaps in achievement and discipline across race and ethnicity (e.g., Voight et al., 2015).

Understanding Discrepancies in Perceptions of School Climate

At times, there also appear to be differences in perceptions of school climate held by students and the adults who work in those schools. For example, many teachers are unaware of how serious and extensive bullying is within their schools and are often ineffective in being able to identify bullying incidents (Bradshaw et al., 2007; Cohen, 2006; Kochenderfer-Ladd & Pelletier, 2008). Given staff and students' exposure to different behavioral contexts, passive or dismissive attitudes towards bullying or a lack of immediate intervention may actually reinforce bullying behaviors because the perpetrator receives no negative consequences (Yoon & Kerber, 2003); moreover, it reduces trust between students and staff, ultimately affecting school climate.

Scholars have also examined how school climate perceptions held by staff in schools impact students' attitudes and behaviors using multi-informant approaches. For example, Espelage et al. (2014) surveyed over 3600 middle school youth and over 1500 school staff across 36 schools with a comprehensive assessment of school climate. Multi-level analyses indicated that staff concerns about school safety were associated with students' reduced willingness to intervene to help other students being victimized. In schools where staff indicated that they felt supported by their administration to address violence in their classrooms, youth reported less violence. This line of research suggests that it is advisable to recognize the "voice" of parents, school personnel, students, and community members to promote engagement and collaborative

experiences of learning and working together as part of sustainable school safety improvement efforts (Cohen, 2006; Devine & Cohen, 2007).

Measurement Challenges and Considerations

Some measures of school climate rely more heavily on individual perceptions (e.g., I feel safe, the teachers at this school care about me) or perceived norms (e.g., students feel safe at this school, bullying is a problem at this school), whereas others focus on personal behaviors or experiences (e.g., I have been bullied, I have seen others using drugs at this school). There is a transactional process between one's behavior, personal experiences, and the way in which they perceive the environment (O'Brennan & Bradshaw, 2017). For example, students who are aggressive tend to hold a hostile or negative world view, are prone to hostile attributional bias where they can process social cues inaccurately, and thus perceive and act on their environment more negatively and aggressively than their peers. Similarly, youth with a history of bullying and peer victimization also tend to perceive that others are out to get them and thus may be hypervigilant to subsequent rejection (Yoon et al., 1999).

It may be helpful for school climate measures to include both behavioral and perceptual indicators to provide further insight into the complex transactional processes between one's prior experiences, particularly those related to aggression and victimization and perceptions of peers and the school environment (O'Brennan & Bradshaw, 2017). Moreover, other students' behavior (and staff behaviors) impact individual perceptions of school climate, thereby highlighting the shared aspect of school climate and its measurement (see Hoy & Feldman, 1987; Konold, 2018; Marsh et al., 2012). There is also a need to triangulate multiple sources of school climate information (Bottiani et al., 2020), and when possible combine quantitative indicators with qualitative data to better understand this complex construct.

Contextual Influences on School Climate

There is growing evidence that perceptions of school climate are heavily influenced by peer, classroom, and school norms. Norms and school climate affect each other in bi-directional ways, as norms are a foundational aspect of school climate (e.g., social norms about bystander behavior), shape many facets of safety, engagement, and relationships. As such, the school climate (e.g., teaching and learning) will also color and shape norms. For example, students become more aggressive over time when aggression is more common in the classroom (Mercer et al., 2009). Alternatively, when the norm in a classroom is to engage in prosocial, supportive, and helpful ways toward peers, these qualities encourage others to engage in these same behaviors when violence occurs in the classroom (Pozzoli et al., 2012). During early adolescence, student behaviors also tend to be highly motivated by their desire to be consistent with peer norms (Juvonen & Cadigan, 2002; Nesdale & Lawson, 2011). However, a study of fourth and fifth grade students showed that although class-level norms of intervention positively affect students' intervening behavior in bullying, on the individual-level, when a student perceived that more peers would help the victims, there was a "bystander effect" that reduced the likelihood that the student would intervene (Barhight et al., 2017). These and other contextual factors contribute to the growing interest in measurement of school climate at multiple levels (e.g., student, classroom, school), and the interaction of factors across multiple levels (see Bottiani et al., 2020; Konold, 2018).

Moreover, many students come to school with experiences of violence and victimization in their homes and communities, and scholars have gained further insights on this dynamic by exploring the continuity of violence across the home-school context (Tippett & Wolke, 2015; Tucker et al., 2013). Close interpersonal ties to one's school community may serve as

mechanisms by which family and community violence are not transferred to violence within the school context (Reaves et al., 2018). For example, in Valido and colleagues' (2020) longitudinal study of middle school youth, greater sense of school belonging moderated the relation between family violence perpetration and school-based aggression.

Role of the Physical Environment of Schools

Much of the research on school climate has focused on safety, relationships/engagement, and instructional aspects of school climate. However, there is a growing interest in the role of the physical environment. Some research suggests that the physical design or layout of a school accounts for up to 25% of a child's rate of learning (Barrett et al., 2013), and may also impact social behaviors and perceptions of school climate (Goldhagen, 2017; Wargo, 2004). For example, the Crime Prevention Through Environmental Design (CPTED) model highlights four features of the environment that potentially impact perceptions and behavior: space design, space use and circulation patterns, territorial features, and physical deterioration (Jeffery, 1977). Originally focused on community violence, CPTED has more recently been applied to schools (Bradshaw et al., 2015; Vagi et al., 2018).

Territorial features, including positive signs of school ownership or school pride, as well as negative indicators like physical deterioration, trash, and disorder (e.g., graffiti, broken windows) influence perceived investment in the school and contribute to social norms that support deviant vs. appropriate behavior (Lindstrom Johnson et al., 2020; Plank et al., 2009). Empirical work suggests that unclaimed or unowned spaces within a school are less likely to be monitored by individuals, which in turn increases the likelihood that delinquent or aggressive behaviors will occur (Astor et al., 1999; Lindstrom Johnson et al., 2018; Plank et al., 2009). The School Assessment for Environmental Typology (SAfETy) was developed to leverage CPTED

principles and serve as an external assessment of school climate. A series of studies using this measure suggests that the SAfETy provides unique information about the school over and beyond typical school climate measures, and is associated with student substance use, violence, and behavior problems (e.g., Bradshaw et al., 2015; Lindstrom Johnson et al., 2016).

Research-Based Strategies and Programs to Improve School Climate

Although a formal, systematic, and comprehensive review of the school climate research is beyond the scope of the current study, a number of reviews have been conducted in recent years. For example, one such review of more than 60 school climate promotion and prevention programs by Voight and Nation (2016) identified common components across the programs, including classroom SEL curriculum, teachers providing support and structure in the classroom, one-on-one student/staff contact, giving students a voice in school decision-making, clean and inviting school buildings and grounds, partnerships with the outside community, incorporating school climate into school policy and mission, and social events and groups. Emerging best practices for school climate intervention suggest that interventions are best conceptualized as a multi-stage process. The National School Climate Council (Cohen et al., 2009) proposed a “roadmap” for intervention that involved developing a school’s capacity for planning, implementing, and evaluating school climate intervention. Similarly, the National Center for Safe and Supportive Learning Environments (Yoder et al., 2017) proposed activities in which schools should engage in anticipation of developing school climate intervention. Both of these models indicate that three distinct processes are important for successful intervention: (a) careful assessment, (b) selecting and implementing effective interventions, and (c) monitoring implementation and evaluating progress. In the section below, we outline three strategies or frameworks that have emerged as the predominate approaches to school climate improvement.

School-wide Approaches

The first set of strategies focuses on whole-school interventions that are norms-based and designed to change the school environment by addressing the school rules and expectations related to student behavior. A growing body of implementation science findings underscores the foundational importance of groundings understandings, school improvement goal settings, and the utilization of specific systematic, instructional and/or relational improvement strategies on empirical data on the one hand and an iterative process of goal-setting and assessment on the other hand (Blasé et al., 2013; Bryk et al., 2015). The Olweus Bullying Prevention Program (Olweus et al., 2007) is one such whole-school approach to school climate promotion and bullying prevention. Although earlier tests of the Olweus Bullying Prevention program in the U.S. did not consistently demonstrate positive impacts on school climate, more recent studies in the U.S. are showing modestly encouraging effects on bullying and safety (Limber et al., 2018; for studies outside the U.S., see Olweus et al., 2018).

Another promising school-wide approach to improving school climate and school safety is Positive Behavioral Interventions and Supports (PBIS; Sugai et al., 2016). PBIS is a comprehensive, behaviorally-informed improvement effort designed to scale-up systems to support implementation of preventive interventions and practices at the more advanced tiers (i.e., tier 2 and 3); these efforts occur with the goal of reducing risk for challenging behaviors, improving behavioral and academic outcomes for students, enhancing school climate and school safety, and optimizing conditions for learning that benefits all students (www.pbis.org/about/about). PBIS emphasizes behaviorally informed and measurable outcomes, and data-driven decision-making, as well as integrating a multi-tiered system of supports (MTSS) to guide implementation (see Sugai et al., 2016; www.PBIS.org). Schools trained in the

PBIS framework are encouraged to collect and monitor data on school climate using surveys completed by students, school personnel, and parents (see La Salle et al., 2018). There is a growing body of rigorous experimental support related to PBIS, including documenting significant improvements in school climate through PBIS implementation, in addition to a range of safety and behavioral outcomes (e.g., Bradshaw et al., 2009; Bradshaw et al., 2012).

Social and Emotional Learning

A second type of school climate promotion strategy leverages prosocial or social emotional learning (SEL) and/or character education informed instructional interventions that involve efforts to build students' social, emotional, and academic learning competencies in ways that might have implications for school climate and safety. The Collaborative for Academic, Social, and Emotional Learning (CASEL; see Durlak et al., 2011; Mahoney et al., 2020) has identified a set of five inter-related SEL competencies that help students manage the social and academic demands of classroom and school environments. Controlled studies of an array of SEL interventions, including social skills (see Durlak et al., 2011), conflict resolution (e.g., Durant et al., 2001), and bullying and violence prevention programs (e.g., Frey et al., 2005) have found positive effects on school safety-related outcomes. A systematic review of 213 of these programs found that they consistently yielded positive student and academic related outcomes (Durlak et al., 2011). Yet in relation to school climate outcomes, SEL program effects are typically targeted and rarely improves all the dimensions of school climate. There is, however, a recent effort by CASEL to expand the SEL model to include a more systemic approach which also considers issues of equity and school climate more explicitly (Mahoney et al., 2020).

Environmental-focused Programming

A third school climate promotion strategy focuses on environmental strategies including elements of the physical environment and school security measures to address school climate and safety. Sprague and Walker (2010), for example, noted that the design, use, and supervision of school space was one of the major sources of vulnerability in relation to the safety dimensions of school climate. Theoretically, interventions focused on the physical environment could involve a range of interventions including improving upkeep and natural surveillance, such as those consistent with the CPTED model described above (Vagi et al., 2018). Practically, however, interventions have focused heavily on security measures including metal detectors, video cameras, and school resource officers (see Servoss, 2017). Evaluation of these measures have found that they have few positive effects on student behavior (Tanner-Smith et al., 2018), but are associated with numerous iatrogenic effects including decreases in perceptions of school safety (Perumean-Chaney, & Sutton, 2012) and lower engagement (Mowen & Manierre, 2017). Further, studies have found that the presence of these measures exacerbate the racial differences in perceptions of school climate (Lindstrom Johnson et al., 2018), and likely contribute to racial inequities in the use of exclusionary student discipline (Kupchik & Ward, 2014).

In addition to these three commonly used school climate intervention and promotion strategies, Voight and Nation (2016) found a number of specific practices associated with improvement in school climate including (a) small group sessions for students with behavior problems, (b) one-on-one time with teachers and staff, and (c) incorporation of student voice in decision making. While many of these interventions did not have controlled evaluations, with more rigorous research they provide emerging opportunities to expand the availability of effective school climate intervention approaches. Importantly, all of the examples noted above include an explicit commitment to sound assessment strategies, explicit and intentional systemic,

instructional and/or relational improvement strategies and an ongoing process of monitoring and evaluation that supports learning and sustainable school improvement efforts.

A Focus on Engagement

Despite which of these three common approaches taken, a core aspect of any school climate promotion effort should be student engagement. Yet many school safety intervention approaches focus on adults as interventionists (e.g., school staff deliver mental health supports; teachers and paraprofessionals engage students in lessons promoting bullying prevention or school climate improvement; and parents work with teachers to promote their students' success). These efforts may be powerful levers for improving student-teacher relationships and other relational dimensions of school climate (Voight & Nation, 2016). Unfortunately, students tend to be minimally involved or passive recipients of these interventions despite research showing that teachers, compared to students, tend to underestimate the frequency of safety threats (Booren et al., 2011; Mitchell et al., 2010).

Moreover, student engagement is common school climate improvement goal. Research has documented that when students are highly engaged, they evidence fewer behavioral problems, show greater academic achievement, and actively contribute to school safety improvement efforts. A number of strategies have been identified to promote engagement, all of which begin with listening to students and talking with (rather than to) them and forming authentic relationships with them (for a review see Reschly, Christenson, & Pohl, 2020). For example, students, especially at the high school level, may be more knowledgeable than adults about violence precursors occurring within a school's population (National Threat Assessment Center, 2019; Stone & Isaacs, 2002; Syvertsen et al., 2009). This highlights the importance of

promoting student disclosure and staff-student communication, and the central role it plays in engagement.

Future Directions to Address Current Gaps and Limitations

The growing interest in school climate reflects an appreciation that school leaders need to pay attention to and promote a safer, more supportive and engaging climate for academic learning, as well as furthering instructional efforts that support behavioral, social, emotional, and civic learning (Jones & Kahn, 2017). There is greater demand for school improvement efforts that are focused on positive individual and organizational health in general. Moreover, multiple studies demonstrate that effective risk prevention efforts need to be coordinated with universal interventions designed to promote individual and organizational competencies/health. Although a state-level school climate/SEL/school violence focused policy review, spanning 2011 to 2017, suggested significant growing interest in school climate, there continues to be a (a) lack of consensus about definitions, (b) lack of focus on implementation science and the iterative process of improvement, and (c) striking gaps between what research suggests will be helpful and current practice and policy (Cohen & Espelage, 2020). While our current discussion is couched within the broader U.S. educational and policy context, there are also clear implications of this work and school climate research and its measurement more broadly for international audiences and settings (see Cohen & Espelage, 2020; Larson et al., in press; Shukla et al., 2019).

There has been less systematic research on how school climate data can and should be used, and how to prepare schools to use those data. In fact, there is growing awareness that ‘readiness’ needs to be considered and promoted when launching a school climate assessment effort (O’Brennan & Bradshaw, 2017). School leaders need to frame and prepare the community for this evaluation and set the tone for how findings should be used to support the change

process, rather than punish schools. Many schools or districts that are now required to measure school climate do not adequately prepare the community for the data. Some school leaders use the findings to provide them with a snapshot of social, emotional, and academic strengths and challenges. It is also advantageous to clarify if and how the findings will be shared more broadly within the community, and for what purpose (Bradshaw et al., 2014).

Moreover, it is important to underscore how this measurement practice is one step that supports an iterative and continuous process of school improvement. After survey administration, school leaders should use the findings to engage students, parents, and staff in the process of understanding the findings, prioritizing improvement goals and, where appropriate, thinking concretely about how students, parents and colleagues can and need to actively support given school improvement goals (Bradshaw et al., 2014). Such data can also help gain a better understanding of the issue of readiness for change (e.g., Bowen, et al., 2006; Hitt et al., 2018; University of Minnesota Extension Center for Youth Development, 2017), the change process (e.g., Cohen et al., 2017), program adoption (https://npbis.org/Docs/PBiS_I_Readiness_Checklist.pdf; George & Martinez, 2007) and the critical role of school-family-community partnerships in that effort (e.g., Ice et al., 2015; Thapa & Cohen, 2017).

With these goals in mind, school climate informed readiness measures and process measures can be used by various stakeholders, including building leaders and/or leadership teams to guide school improvement and implementation efforts (Cohen et al., 2017; Dymnicki et al., 2014). Also relevant to this dialogue is a series of important findings emerging from the field of implementation science in relation to school climate and school safety (Blasé et al., 2013; Bryk, et al., 2015). For example, as noted above there is a small but growing interest in additional

school climate informed measurement practices such as readiness measures, process measurements, and surveys that recognize the “voice” of community members and leaders (Cohen et al., 2017). Virtually all of the school climate informed ‘road maps’ underscore the practical importance of engaging students, their parents and even community members/leaders as well as fellow school personnel to collaboratively learn and work together in the improvement process. Although many, if not most, school leaders were trained to lead in a ‘top down’ manner, a more inclusive and fundamentally collaborative (“bottom up” as well as “top down”) school improvement efforts contributes to sustainable school change (Blasé et al., 2013; Bryk et al., 2015). School leaders can use these climate, readiness, and process measures to support engagement, fidelity, and sustainable school improvement efforts. There is also substantial empirical evidence that school climate can be a factor influencing the implementation fidelity of school-based prevention programs, as well as a potential moderator of program outcomes (see Blasé et al., 2013; Domitrovich et al., 2008).

While there continues to be compelling evidence of the significance of school climate in relation to a range of student and staff outcomes, the directions of these associations and the causal mechanisms are not well understood (see Benbenishty et al., 2016). Additional longitudinal studies, particularly with experimental designs, are needed to advance the field of school climate research. While multi-level modeling approaches and related software programs (e.g., HLM) have greatly enhanced our ability to measure school climate and account for variance across multiple levels of the school ecology (e.g., student, classroom, school) (see Konold, 2018), there is still a significant need for additional attention to and development of more sophisticated analytic approaches that better distinguish individual vs. contextual variability in perceptions of school climate and intervention outcomes. Finally, there is a great

need for improved measures, which balance the need for efficiency with validity, incorporate multiple perspectives and the various facets of school climate (Lindstrom Johnson et al., 2020), and are sensitive to change over time. Such approaches can also be particularly helpful for informing the selection of evidence-based programs using data dashboards and tools to support decision-making by school leaders and teams (Bradshaw et al., 2014).

It is important to note that there are numerous limitations to the extant school climate intervention research. Although a formal, systematic, and comprehensive review of the school climate research is beyond the scope of the current study, we leveraged a number of reviews conducted in recent years in conducting our review and formulating the set of practice recommendations that we have begun to outline above and summarize below. Our review of the extant literature suggests the impact of various prevention models and intervention approaches is somewhat mixed; as a result, there is an urgent need for additional evidence of models that are effective at improving school climate and testing the theory of change process by which climate impacts school safety and other violence related outcomes. Moreover, the evaluations of most programs often suggests that they have had stronger and more reliable effects on the adults' ratings of school climate than students' ratings. This may be because there is less variability in teacher experiences than students or in many cases teachers receive more direct training and intervention than students. It is noteworthy that the school-wide approaches review, like the Olweus model and PBIS, have frequently been implemented primarily to address bullying and other student discipline problems, and school climate has often been a secondary focus of the intervention or proposed mediator of the program effects on student behaviors. These models have, however, more consistent demonstrated effects on behavioral outcomes, along with teachers/adults' ratings of climate than students. It is possible that teachers are not privy to some

covert interactions among peers (e.g., gossiping, social exclusion), which would speak to the need for ensuring that the voice of students is more accurately heard and reflected in intervention programming (Bradshaw et al., 2007). This may also suggest the need for more participatory research methods to involve the feedback of students within school climate intervention delivery, in addition to assessment of the models' climate related outcomes; this finding illustrates the need for "bottom up" measurement and intervention approaches, alongside "top down" approaches to school climate measurement practices and policy-focused prevention efforts.

A second and related issue is that most of the school climate programs and interventions reviewed have often been implemented to address primary outcomes such as violence and bullying prevention, and student discipline problems. It is possible that the activities and components of these interventions that students directly interact with or experience do not significantly impact their own perceptions of school climate. The extent to which school violence and safety are in some ways two sides of the same coin requires further exploration and methodological consideration, as are efforts to disentangle safety from the broader multi-dimensional concept of school climate (O'Brennan & Bradshaw, 2017). Prior research has rarely considered the emerging knowledge related to implementation science with regard to how program implementation is tailored to specific schools, and whether and how program data are used to modify program implementation over time (see Domitrovich et al., 2008).

Conclusions and Recommendations

This paper contributes to science and practice, and advances them by synthesizing and analyzing the extant literature with a particular focus on implications and recommendations for future research and practice. Taken together, the research on school climate has had a significant impact on state-level policy and practice guidelines in the United States (Cohen & Espelage,

2020). Yet there remain many gaps between research and policy, and the area of school climate promotion is one where a number of gaps persist. A number of groups (e.g., National School Climate Council, 2005) have issued recommendations about an effective and sustainable improvement process (2012) as well as essential prosocial (e.g., social and emotional learning [SEL], character education, mental health promotion and school climate) improvement goals that shape sustainable and helpful improvement efforts (2015). However, few state-level school climate policies today focus on concrete systemic, instructional, and relational improvement steps that support a sustainable school/district improvement process (Cohen & Espelage, 2020).

School psychologists and school mental health practitioners play a central role in school climate research, practice, and policy; they are often unofficial and occasionally explicitly named school climate leaders or coordinators in their schools and districts. As such, it is essential that they be aware of and effectively communicate what is known and yet to be fully understood about the state of the science and practice related to school climate improvement. For example, school psychologists can and should play a central role in consistently defining school climate. As we noted above, we strongly advocate for a more consistent adoption of the US DOE's three-factor model of school climate to include safety, engagement, and the environment. Relatedly, school psychologists play an important role in improving measurement of school climate, in relation to school safety, equity, and other outcomes of interest to educators and school leaders. School climate data collected from multiple perspectives and multiple levels can also be used to inform data-based decision making and the monitoring of program outcomes. The use of multi-informant, reliable, and valid school climate measures is strongly encouraged for monitoring contextual considerations and assessing program impacts in relation to both climate and safety.

School psychologists can underscore that school improvement (like individual learning) is necessarily an iterative and continuous process of learning and development. Sunsets may be perfect, but organizations and people will always have problems and challenges. It is also that we do our best to understand our current strengths and challenges, delineate schoolwide, instructional and/or relational goals and linked improvement strategies and then evaluate current gains and challenges. For a variety of reasons, different schools or districts will decide to focus on any number of schoolwide, instructional and/or relational improvement goals. We suggest that school psychologists consider the following five steps, regardless of the particular school climate improvement goals that a given school and/or district may decide to strategically focus on “now”: First, learning about evidence-based practices that potentially support schoolwide, instructional and/or relational improvement efforts. Second, consider how you and your school/district may be involved with some of these efforts already. And, to the extent that this is the case, recognize and celebrate these efforts. Third, understand how current measurement practices can begin to shed light on how helpful these current improvement efforts are. Fourth, use these data trends and findings to develop the next set of systemic, instructional and/or relational improvement goals and strategies. And, finally, develop plans to share your school climate improvement process and findings within your school community and/or with other schools (network improvement communities).

Like other school improvement efforts, there is a strong push for schools to use “evidenced-based interventions” to address, and hopefully enhance school climate in order to address school safety. There is some question, however, as to what if any models are truly evidence-based when it comes to moving the needle on school climate, more specifically, as compared to improving correlates of climate (e.g., bullying, discipline problems) (see review by

Voight & Nation, 2016). Yet there is great promise in using school climate informed readiness, process, and community measures as potential contextual factors to inform the selection and implementation of school safety improvement efforts (Cohen et al., 2017; Domitrovich et al., 2008; Dymnicki et al., 2014). Particularly important and perhaps a nuanced insight in this dynamic is the consideration of school climate as a contextual influence on program implementation. Although an implementation science perspective on school climate is an emerging paradigm in the field, the roots of this movement date back to early work by Bryk and others (for a review see Bryk et al., 2010, 2015; Domitrovich et al., 2008). Nevertheless, this contemporary and contextual lens on implementation science may provide great insight as to why some school-based programming efforts are more successful and sustainable than others (e.g., Bradshaw et al., 2008; Domitrovich et al., 2008). As such, future efforts to scale evidence-based programs in schools would be well advised to consider contextual factors like school climate and readiness for program implementation and adoption. Such efforts should take into consideration various sources of information on school climate, in relation to indicators and outcomes at multiple levels.

School climate improvement needs to be viewed as an iterative, continuous and data driven process (for additional recommendations and guidance, see Cohen et al., 2007; Cohen, & Espelage, 2020; National School Climate Council, 2012; also see <https://safesupportivelearning.ed.gov/school-climate-improvement>). School psychologists and other educational leaders advocating for an improvement through school-based programming should carefully consider and assess readiness and monitor contextual changes in conjunction with outcomes. School psychologists are often called to take on the role of implementation support coaches and to lead or partner with state-level infrastructure efforts in an effort to

optimize implementation and promote sustainable systems-level change. District- and state-level efforts to scale frameworks like PBIS and SEL provide a good model to guide the field of school climate promotion more broadly (see for example Bradshaw et al., 2014).

References

- Anderson, C. (1982). The search for school climate: A review of the research. *Review of Educational Research*, 52, 368–420. doi.org/10.3102/00346543052003368
- Astor, R. A., Meyer, H. A., & Behre, W. J. (1999). Unowned places and times: Maps and interviews about violence in high schools. *American Educational Research Journal*, 36(1), 3-42. https://doi.org/10.3102/00028312036001003
- Barhight, L. R., Hubbard, J. A., Grasseti, S. N., & Morrow, M. T. (2017). Relations between actual group norms, perceived peer behavior, and bystander children's intervention to bullying. *Journal of Clinical Child & Adolescent Psychology*, 46(3), 394-400. doi.org/10.1080/15374416.2015.1046180
- Barrett, P., Zhang, Y., Moffat, J., & Kobbacy, K. (2013). A holistic, multi-level analysis identifying the impact of classroom design on pupils' learning. *Building and Environment*, 59, 678-689. doi.org/10.1016/j.buildenv.2012.09.016
- Benbenishty, R., Astor, R.A., Roziner, I, & Wrabel, S.L. (2016). Testing the causal links between school climate, school violence, and school academic performance: A cross-lagged panel autoregressive model. *Educational Researcher*, 45(3), 197-206. doi.org/10.3102/0013189X16644603
- Berkowitz, R., Moore, H., Astor, R.A., & Benbenishty, R. (2017). A research synthesis of the associations between socioeconomic background, inequality, school climate, and academic achievement. *Journal of Educational Psychology*, 109 (4), 532–545. doi.org/10.1037/edu0000155
- Blasé, K., van Dyke, M., & Fixsen, D. (2013). *Implementation drivers: Assessing best practices*. Adapted with permission by The State Implementation & Scaling-up of Evidence-based

- Practices Center (SISEP). Based on the work of The National Implementation Research Network (NIRN) Frank Porter Graham Child Development Institute, University of North Carolina Chapel Hill. Available at:
<http://implementation.fpg.unc.edu/resources/implementation-drivers-assessing-best-practices>.
- Booren, L. M., Handy, D. J., & Power, T. G. (2011). Examining perceptions of school safety strategies, school climate, and violence. *Youth Violence and Juvenile Justice*, 9(2), 171-187. <https://doi.org/10.1177/1541204010374297>
- Bottiani, J., Bradshaw, C. P., & Mendelson, T. (2016a). A multilevel examination of racial disparities in high school discipline: Black and White adolescents' perceived equity, school belonging, and adjustment problems. *Journal of Educational Psychology*, 109(4), 532-545. <http://dx.doi.org/10.1037/edu0000155>
- Bottiani, J. H., Bradshaw, C. P., & Mendelson, T. (2016b). Inequality in Black and White high school students' perceptions of school support: An examination of race in context. *Journal of Youth and Adolescence*, 45, 1176-1191. doi.org/10.1007/s10964-015-0411-0
- Bottiani, J., Lindstrom Johnson, S., McDaniel, H., & Bradshaw, C. (2020). Triangulating school climate: Areas of convergence and divergence across multiple levels and perspectives. *American Journal of Community Psychology*, 3-4, 423-436. DOI: 10.1002/ajcp.1241
- Bowen, G.L., Rose, R.A., & Ware, W.B. (2006). The reliability and validity of the school success profile learning organization measure. *Evaluation and Program Planning*, 29(1), 97-104
- Bradshaw, C. P., Debnam, K. J., Lindstrom Johnson, S., Pas, E. T., Hershfeldt, P., Alexander, A....& Leaf, P. J. (2014). Maryland's evolving system of social, emotional, and

- behavioral interventions in public schools: The Maryland Safe and Supportive Schools Project. *Adolescent Psychiatry*, 4(3), 194-206. DOI: doi.org/10.2174/221067660403140912163120
- Bradshaw, C. P., Koth, C. W., Bevans, K. B., Ialongo, N., & Leaf, P. J. (2008). The impact of school-wide Positive Behavioral Interventions and Supports (PBIS) on the organizational health of elementary schools. *School Psychology Quarterly*, 23(4), 462-473. <https://doi.org/10.1037/a0012883>
- Bradshaw, C. P., Koth, C. W., Thornton, L. A., & Leaf, P. J. (2009). Altering school climate through school-wide Positive Behavioral Interventions and Supports: Findings from a group-randomized effectiveness trial. *Prevention Science*, 10(2), 100-115. <https://doi.org/10.1007/s11121-008-0114-9>
- Bradshaw, C. P., Milam, A. J., Furr-Holden, C. D., & Lindstrom Johnson, S. (2015). The School Assessment for Environmental Typology (SAfETy): An observational measure of school environment. *American Journal of Community Psychology*, 56, 280-292. <https://doi.org/10.1007/s10464-015-9743-x>
- Bradshaw, C. P., Sawyer, A. L., & O'Brennan, L. M. (2007). Bullying and peer victimization at school: Perceptual differences between students and school staff. *School Psychology Review*, 36 (3), 361-382.
- Bradshaw, C. P., Waasdorp, T. E., Debnam, K. J., & Lindstrom Johnson, S. (2014). Measuring school climate: A focus on safety, engagement, and the environment. *Journal of School Health*, 84, 593-604. [tps://doi.org/10.1111/josh.12186](https://doi.org/10.1111/josh.12186)
- Bradshaw, C. P., Waasdorp, T. E. & Leaf, P. J. (2012). Effects of School-Wide Positive Behavioral Interventions and Supports on child behavior problems. *Pediatrics*, 130(5),

e1136-e1145. <https://doi.org/10.1542/peds.2012-0243>

Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Leaning to improve: How America's schools can get better at getting better*. Boston: Harvard Education Press.

Bryk, A. S., Sebring, P. B., Allensworth, E., Luppescu, S., & Easton, J. Q. (2010). *Organizing schools for improvement: Lessons from Chicago*. Chicago, IL: University of Chicago Press.

Centers for Disease Control and Prevention. (2009). *School connectedness: Strategies for increasing protective factors among youth*. Retrieved from <http://www.cdc.gov/HealthyYouth/AdolescentHealth/pdf/connectedness.pdf>

Cohen, J. (2006). Social, emotional, ethical and academic education: Creating a climate for learning, participation in democracy and well-being. *Harvard Educational Review*, 76 (2, Summer), 201-237. (www.hepg.org/her/abstract/8)

Cohen, J. (2017). School climate, SEL character education and other prosocial “camps”: Similarities and a difference. *Teachers College Record*, ID Number: 22165. <https://www.researchgate.net/publication/320237536>

Cohen, J., & Espelage, D. L. (editors) (2020). *Feeling safe in school: Bullying and violence prevention around the world*. Harvard Educational Press.

Cohen, J., Fege, A., & Pickeral, T. (2009). Measuring and improving school climate: A strategy that recognizes, honors and promotes social, emotional and civic learning the foundation for love, work and engaged citizenry. *Teachers College Record*, 111(1), 180-213.

Cohen, J., McCabe, E. M., Michelli, N. M., & Pickeral, T. (2009). School climate: Research, policy, teacher education and practice. *Teachers College Record*, 111 (1), 180-213.

- Cohen, J., & Thapa, A. (2017). School climate improvement: What U.S. educators want and need? *International Journal on School Climate and Violence Prevention*, 2, 90-116.
- Cohen, J., Thapa, A., & Higgins-D'Alessandro, A. (2017). School climate/social emotional learning measurement systems: Trends, contributions, challenges and opportunities, *Journal of Educational Leadership and Policy*, 1, 117-139. ISSN#: 2473-2826.
- Debnam, K. J., Lindstrom Johnson, S., Waasdorp, T. E., & Bradshaw, C. P. (2014). Equity, connection, and engagement in the school context to promote positive youth development. *Journal of Research on Adolescence*, 24, 447-459.
[/doi.org/10.1111/jora.12083](https://doi.org/10.1111/jora.12083)
- Devine, J., & Cohen, J. (2007). *Making Your School Safe: Strategies to Protect Children and Promote Learning*. New York: Teachers College Press.
- Domitrovich, C. E., Bradshaw, C. P., Poduska, J., Hoagwood, K., Buckley, J., Olin, S., Romanelli, L. H., Leaf, P. J., Greenberg, M. T., & Ialongo, N. S. (2008). Maximizing the implementation quality of evidence-based preventive interventions in schools: A conceptual framework. *Advances in School Mental Health Promotion: Training and Practice, Research and Policy*, 1(3), 6-28. doi:10.1080/1754730X.2008.9715730
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405-432.
doi.org/10.1111/j.1467-8624.2010.01564.x
- Durant, R. H., Barkin, S., & Krowchuk, D. P. (2001). Evaluation of a peaceful conflict resolution and violence prevention curriculum for sixth-grade students. *Journal of Adolescent Health*, 28, 386–393. [doi.org/10.1016/S1054-139X\(00\)00194-4](https://doi.org/10.1016/S1054-139X(00)00194-4)

- Dymnicki, A., Wandersman, A., Osher, D., & Grigorescu, V. (2014). Willing, able, ready: Basics and policy implications of readiness as a key component for implementation of evidence-based interventions. *ASPE Issue Brief*, Office of the Assistant Secretary for Planning and Evaluation, Office of Human Service Policy, U.S. Department of Health and Human Services.
- Espelage, D. L., Low, S., & Jimerson, S. (2014). Understanding school climate, aggression, peer victimization, and bully perpetration: contemporary science, practice, and policy. *School Psychology Quarterly*, 29, 233-237. doi:10.1037/spq0000090
- Espelage, D. L., Polanin, J., & Low, S. (2014). Teacher & staff perceptions of school environment as predictors of student aggression, victimization, and willingness to intervene in bullying situations. *School Psychology Quarterly*, 29 (3), 387-405. doi: 10.1037/spq0000072
- ESSA (2015). *Every Student Succeeds Act of 2015*. Pub. L. No. 114-95 § 114 Stat. 1177 (2015-2016). U.S. Department of Education.
- Fan, W., Williams, C. M., & Corkin, D. M. (2011). A multilevel analysis of student perceptions of school climate: The effect of social and academic risk factors. *Psychology in the Schools*, 48(6), 632-647. doi.org/10.1002/pits.20579
- Flannery, D. J., Bear, G., Benbenishty, R., Astor, R. A., Bradshaw, C. P., Sugai, G., . . . Osher, D. (2019). The scientific evidence supporting an eight point public health oriented action plan to prevent gun violence. In D. Osher, M. Mayer, R. Jagers, K. Kendziora, & L. Wood (Eds.). *Keeping students safe and helping them thrive: A collaborative handbook on school safety, mental health and wellness*. (Vol. 2, pp. 227-255). New York: Praeger.
- Frey, K. S., Hirschstein, M. K., Snell, J. L., Van Schoiack, Edstrom, L., Mackenzie, E. P., &

- Broderick, C. J. (2005). Reducing playground bullying and supporting beliefs: An experimental trial of the Steps to Respect program. *Developmental Psychology*, 41, 479–490. doi.org/10.1037/0012-1649.41.3.479
- George, H. P., & Martinez, S.A. (2007). *How to get PBIS into your school*. Tampa, FL: University of South Florida. <https://www.pbis.org/resource/how-to-get-pbis-in-your-school>
- Gregory, A., & Cornell, C. (2009). Tolerating' adolescent needs: Moving away from zero tolerance policies in high school. *Theory into Practice*, 48(2), 106– 113. doi.org/10.1080/00405840902776327
- Goldhagen, S. W. (2017). *Welcome to your world: How the built environment shapes our lives*. New York, NY: Harper Collins.
- Haynes, N. M., Emmons, C., & Ben-Avie, M. (1997). School climate as a factor in student adjustment and achievement. *Journal of Educational and Psychological Consultation*, 8(3), 321-329. doi.org/10.1207/s1532768xjepc0803_4
- Hirschi, T. (1969). *Causes of delinquency*. Berkley: University of California Press.
- Hitt, D. H., Robinson, W., & Player, D. (2018). *District readiness to support school turnaround: A guide for state education agencies and districts, 2nd edition*. The Center on School Turnaround at WestEd. San Francisco, CA: WestEd.
- Horner, R. H., Sugai, G., Smolkowski, K., Eber, L., Nakasato, J., Todd, A. W., & Esperanza, J. (2009). A randomized, wait-list controlled effectiveness trial assessing School-Wide Positive Behavior Support in elementary schools. *Journal of Positive Behavior Interventions*, 11(3), 133-144. doi.org/10.1177/1098300709332067

- Hoy, W., & Feldman, J. (1987). Organizational health: The concept and its measure. *Journal of Research and Development in Education*, 20, 30-38
- Ice, M., Thapa, A., & Cohen, J. (2015). Recognizing community “voice” and a youth-led school-community partnerships in the school climate improvement process. *School Community Journal*, 25(1), 9-28.
- Jeffery, C. R. (1977). *Crime Prevention Through Environmental Design*. Sage.
- Jones, S. M., & Kahn, J. (2017). *The evidence base for how we learn: Supporting students’ social, emotional, and academic development*. Consensus statements of evidence from the Council of Distinguished Scientists. National Commission on Social, Emotional, and Academic development. Aspen Institute. September 13, 2017.
- Juvonen, J., & Cadigan, J. (2002). Social determinants of public behavior of middle school youth: perceived peer norms and need to be accepted. In Pajares, F. & Urdan, T. (Eds), *Adolescence and education: Academic motivation of adolescents* (pp. 277–297). Greenwich, CT: Information Age.
- Kochenderfer-Ladd, B., & Pelletier, M. E. (2008). Teachers’ views and beliefs about bullying: Influences on classroom management strategies and students’ coping with peer victimization. *Journal of School Psychology*, 46, 431–453.
doi.org/10.1016/j.jsp.2007.07.005
- Konold, T. R. (2018). A multilevel MTMM approach to estimating the influences of contextual factors on trait and informant based method effects in assessments of school climate. *Journal of Psychoeducational Assessment*, 36, 464-476. doi:10.1177/0734282916683286
- Kupchik, A., & Ward, G. (2014). Race, poverty, and exclusionary school security: An empirical analysis of US elementary, middle, and high schools. *Youth Violence and Juvenile*

Justice, 12(4), 332-354. doi.org/10.1177/1541204013503890

Larson, K.E., Nguyen, A. J., Lindstrom Johnson, S., Orozco Solis, M.G., Humphreys, A., & Bradshaw, C.P. (in press). A systematic literature review of school climate in low and middle income countries. *International Journal of Educational Research*.

La Salle, T. P., McIntosh, K., & Eliason, B. M. (2018). *School climate survey suite administration manual*. Eugene, OR: OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports. University of Oregon. Available: <https://www.pbisapps.org/Resources/SWIS%20Publications/School%20Climate%20Survey%20Suite%20Manual.pdf>

Limber, S., Olweus, D., Wang, W., Masiello, M., & Breivik, K. (2018). Evaluation of the Olweus Bullying Prevention Program: A large scale study of U.S. students in grades 3–11. *Journal of School Psychology*, 69, 56-72. doi:10.1016/j.jsp.2018.04.004.

Lindstrom Johnson, S., Cash, A., Debnam, K., Milam, A., & Bradshaw, C.P. (2016). Assessing the association between observed school disorganization and school violence: Implications for school climate interventions. *Psychology of Violence*, 7(2), 181–191. doi:10.1037/vio0000045

Lindstrom Johnson, S., Reichenberg, R. E., Shukla, K., Waasdorp, T. E., & Bradshaw, C. P. (2019). Improving the measurement of school climate using item response theory. *Educational Measurement: Issues and Practice*, 38 (4), 99–107. DOI: [10.1111/emip.12296](https://doi.org/10.1111/emip.12296)

Lindstrom Johnson, S., Waasdorp, T., Bottiani, J., & Bradshaw, C. P. (2018). Surveillance or safekeeping: How school security officer and camera presence influence students'

- perceptions of safety, equity, and support. *Journal of Adolescent Health*, 63(6), 732-738.
<https://doi.org/10.1016/j.jadohealth.2018.06.008>
- Lindstrom Johnson, S., Waasdorp, T. E., & Bradshaw, C. P. (2020). School climate. In Sprinrad and Liew (Eds.). *Encyclopedia of Education*. Routledge. New York.
- Mahoney, J.L., Weissberg, R.P., Greenberg, M.T., Dusenbury, L., Jagers, R.J., ... Yoder, N. (2020). *Systemic Social and Emotional Learning: Promoting Educational Success for All Preschool to High School Students*. Manuscript Submitted for Publication.
- Marsh, H. W., Lüdtke, O., Nagengast, B., Trautwein, U., Morin, A. J., Abduljabbar, A. S., & Köller, O. (2012). Classroom climate and contextual effects: Conceptual and methodological issues in the evaluation of group-level effects. *Educational Psychologist*, 47(2), 106-124.
- Mercer, S. H., McMillen, J. S., & DeRosier, M. E. (2009). Predicting change in children's aggression and victimization using classroom-level descriptive norms of aggression and pro-social behavior. *Journal of School Psychology*, 47(4), 267-289.
doi.org/10.1016/j.jsp.2009.04.001
- Mitchell, M. M., Bradshaw, C. P., & Leaf, P. J. (2010). Student and teacher perceptions of school climate: A multilevel exploration of patterns of discrepancy. *Journal of School Health*, 80(6), 271-279. doi:10.1111/j.1746-1561.2010.00501.x
- Mowen, T. J., & Manierre, M. J. (2017). School security measures and extracurricular participation: An exploratory multi-level analysis. *British Journal of Sociology of Education*, 38(3), 344-363. doi.org/10.1080/01425692.2015.1081091

- National School Climate Council (2007). *The School Climate Challenge: Narrowing the gap between school climate research and school climate policy, practice guidelines and teacher education policy*. <http://www.schoolclimate.org/publications/policy-briefs.php>
- National School Climate Council (2009). *National School Climate Standards: Benchmarks to promote effective teaching, learning and comprehensive school improvement*. National School Climate Center. (www.schoolclimate.org/climate/standards.php)
- National School Climate Council (2012). *The School Climate Improvement Process: Essential Elements. School Climate Brief, No. 4*. Available online at: <http://www.schoolclimate.org/climate/schoolclimatebriefs.php>
- National School Climate Council (2015). School Climate and Prosocial Educational Improvement: Essential Goals and Processes that Support Student Success for All. *Teachers College Record*, May 2015.
- National Threat Assessment Center. (2019). *Protecting America's Schools: A U.S. Secret Service Analysis of Targeted School Violence*. U.S. Secret Service, Department of Homeland Security. https://www.secretservice.gov/data/protection/ntac/Protecting_Americas_Schools.pdf
- Nesdale, D., & Lawson, M. J. (2011). Social groups and children's intergroup attitudes: Can school norms moderate the effects of social group norms? *Child Development*, 82(5), 1594-1606. doi.org/10.1111/j.1467-8624.2011.01637.x
- O'Brennan, L., & Bradshaw, C. P. (2017). The transactional association between school climate and bullying. In C. Bradshaw (Ed.), *Handbook of Bullying Prevention: A Lifecourse Perspective* pp. 165-176. National Association of Social Workers Press: Washington, DC.

- Olweus, D., Limber, S. P., Flerx, V. C., Mullin, N., Riese, J., & Snyder, M. (2007). *Olweus Bullying Prevention Program: Schoolwide guide*. Center City, MN: Hazelden.
- Olweus, D., Solberg, M. E., & Breivik, K. (2018). Long-term school-level effects of the Olweus Bullying Prevention Program (OBPP). *Scandinavian Journal of Psychology*, October. doi:10.1111/sjop.12486
- Osher, D., & Berg, J. (2017). *School Climate and Social and Emotional Learning: The Integration of Two Approaches*. Edna Bennet Pierce Prevention Research Center, Pennsylvania State University.
<https://www.air.org/sites/default/files/downloads/report/School-Climate-and-Social-and-Emotional-Learning-Integrative-Approach-January-2018.pdf>
- Perumean-Chaney, S. E., & Sutton, L. M. (2013). Students and perceived school safety: The impact of school security measures. *American Journal of Criminal Justice*, 38(4), 570-588. doi.org/10.1007/s12103-012-9182-2
- Plank, S. B., Bradshaw, C. P., & Young, H. (2009). An application of “broken-windows” and related theories to the study of disorder, fear, and collective efficacy in schools. *American Journal of Education*, 115, 227–247. doi.org/10.1086/595669
- Pozzoli, T., Gini, G., & Vieno, A. (2012). The role of individual correlates and class norms in defending and passive bystanding behavior in bullying: A multilevel analysis. *Child Development*, 83(6), 1917-1931. doi.org/10.1111/j.1467-8624.2012.01831.x
- Reaves, S., McMahon, S. D., Duffy, S. N., & Ruiz, L. (2018). The test of time: A meta-analytic review of the relation between school climate and problem behavior. *Aggression and Violent Behavior*, 39, 100-108. doi:10.1016/j.avb.2018.01.006

- Reschly, A., Christenson, S., & Pohl, A. (Eds.). (2020). *Evidence-based Practical Student Engagement Interventions: Promoting Students' Academic, Behavioral, Cognitive, and Affective Engagement at School*. New York: Springer.
- Servoss, T. J. (2017). School security and student misbehavior: A multi-level examination. *Youth & Society*, 49(6), 755-778. doi.org/10.1177/0044118X14561007
- Shukla, K., Waasdorp, T., Lindstrom Johnson, S., Nguyen, A., Orozco Solis, M. G., Colungar, C., & Bradshaw, C.P. (2019). Does school climate mean the same thing in the U.S. as in Mexico? A focus on measurement invariance. *Journal of Psychoeducational Assessment*, 37(1), 55–68 [10.1177/0734282917731459](https://doi.org/10.1177/0734282917731459).
- Sprague, J. R., & Walker, H. M. (2010). Building safe and healthy schools to promote school success: Critical issues, current challenges, and promising approaches. In Shinn & Walker's, *Interventions for achievement and behavior problems in a three-tier model including RTI* (pp. 225-257). Washington, DC: NASP.
- Steffgen, G., Recchia, S., & Viechtbauer, W. (2013). The link between school climate and violence in school: A meta-analytic review. *Aggression and Violent Behavior*, 18(2), 300-309. doi.org/10.1016/j.avb.2012.12.001
- Stone, C., & Issacs, M. L. (2002). Involving students in violence prevention: Anonymous reporting and the need to promote and protect confidences. *National Association of Secondary School Principals Bulletin*, 86, 633, 54-65. doi.org/10.1177/019263650208663305
- Sugai, G., La Salle, T., Freeman, J., Simonsen, B., & Chafouleas, S. (2016). *School climate: Academic achievement and social behavior competence*. Eugene, OR: National Technical Assistance Center for Positive Behavioral Interventions and Supports. www.PBIS.org.

- Syvertson, A., Flanagan, C., & Stout, M. (2009). Code of silence: Students' perceptions of school climate and willingness to intervene in a peer's dangerous plan. *Journal of Educational Psychology, 101*(1), 219-245.
- Syvertsen, A. K., Flanagan, C. A., & Stout, M. D. (2009). Code of silence: Students' perceptions of school climate and willingness to intervene in a peer's dangerous plan. *Journal of Educational Psychology, 101*(1), 219–232. <https://doi.org/10.1037/a0013246>
- Tanner-Smith, E. E., Fisher, B. W., Addington, L. A., & Gardella, J. H. (2018). Adding security, but subtracting safety? Exploring schools' use of multiple visible security measures. *American Journal of Criminal Justice, 43*(1), 102-119. doi.org/10.1007/s12103-017-9409-3
- Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A review of school climate research. *Review of Educational Research, 83*(3), 57-385. doi:10.3102/0034654313483907
- Thapa, A. & Cohen, J. (2017). School Climate Community Scale: Report on construct validity and internal consistency. *School Community Journal, 27*(2), 301-318. Available: <http://www.schoolcommunitynetwork.org/SCJ.aspx>
- Tippett, N., & Wolke, D. (2015). Aggression between siblings: Associations with the home environment and peer bullying. *Aggressive Behavior, 41*, 14–24. doi:10.1002/ab.21557
- Totura, C. M. W., MacKinnon-Lewis, C., Gesten, E. L., Gadd, R., Divine, K. P., Dunham, S., & Kamboukos, D. (2009). Bullying and victimization among boys and girls in middle school: The influence of perceived family and school contexts. *The Journal of Early Adolescence, 29*(4), 571–609. <http://dx.doi.org/10.1177/0272431608324190>

Tucker, C. J., Finkelhor, D., Shattuck, A. M., & Turner, H. (2013). Prevalence and correlates of sibling victimization types. *Child Abuse and Neglect*, 37, 213–223.

doi:10.1016/j.chiabu.2013.01.006

University of Minnesota Extension Center for Youth Development. (2017). Readiness Inventory. University of Minnesota Extension Center for Youth Development. Retrieved from the University of Minnesota Digital Conservancy, <http://hdl.handle.net/11299/195762>.

U.S. Department of Education, Office of Safe and Healthy Students. (2016). *Quick guide on making school climate improvements*. Washington, DC: Author. This document is available free of charge at <http://safesupportivelearning.ed.gov/SCIRP/Quick-Guide>.

Vagi, K. J., Stevens, M. R., Simon, T. R., Basile, K. C., Carter, S. P., & Carter, S. L. (2018). Crime Prevention Through Environmental Design (CPTED) characteristics associated with violence and safety in middle schools. *Journal of School Health*, 88(4), 296-305.

Valido, A., Ingram, K. M., Espelage, D. L., Torgal, C., Merrin, G., & Davis, J. (2020). Intra-familial violence and bullying perpetration among early adolescents: Moderating role of school sense of belonging. *Journal of Family Violence*.

Voight, A., Hanson, T., O'Malley, M., & Adekanye, L. (2015). The racial school climate gap: Within-school disparities in students' experiences of safety, support, and connectedness. *American Journal of Community Psychology*, 56(3-4), 252-267.

Voight, A., & Nation, M. (2016). Practices for improving secondary school climate: A systematic review of the research literature. *American Journal of Community Psychology*, 58(1-2), 174-191. doi: 10.1002/ajcp.12074

Waasdorp, T. E., Lindstrom Johnson, S., Shukla, K., & Bradshaw, C. P. (2019). Measuring

- school climate: Invariance across middle and high school students. *Children & Schools*, *cdz026*, <https://doi.org/10.1093/cs/cdz026>
- Waasdorp, T. E., Pas, E., O'Brennan, L. M., & Bradshaw, C. P. (2011). A multilevel perspective on the climate of bullying: Discrepancies among students, school staff, and parents. *Journal of School Violence*, *10*, 115 - 132. doi:10.1080/15388220.2010.539164
- Wang, M., & Degol, J. L. (2015). School climate: a review of the construct, measurement, and impact on student outcomes. *Educational Psychology Review*, *28*, 315-352.
- Wang, K., Chen, Y., Zhang, J., & Oudekerk, B.A. (2020). *Indicators of School Crime and Safety: 2019* (NCES 2020-063/NCJ 254485). National Center for Education Statistics, U.S. Department of Education, and Bureau of Justice Statistics, Washington, DC.
- Wargo, J. (2004). *The physical school environment: An essential component of a health-promoting school*. WHO Information Series on School Health - Document No. 2 WHO, Geneva, <https://www.who.int/ceh/publications/cehphysical/en/>.
- Wiatrowski, M. D., Griswold, D. B., & Roberts, M. K. (1981). Social control theory and delinquency. *American Sociological Review*, *46*, 525-541. doi:10.2307/2094936
- Yoder, N., Darling-Churchill, K., Colombi, G. D., Ruddy, S., Neiman, S., Chagnon, E., & Mayo, R. (2017). *School climate improvement reference manual*. Washington, DC: U.S. Department of Education, Office of Safe and Healthy Students.
- Yoon, J., Hughes, J., Gaur, A., & Thompson, B. (1999). Social cognition in aggressive children: A meta-analytic review. *Cognitive and Behavioral Practice*, *6*(4), 320-331. [doi.org/10.1016/S1077-7229\(99\)80051-0](https://doi.org/10.1016/S1077-7229(99)80051-0)
- Yoon, J. S., & Kerber, K. (2003). Bullying: Elementary teachers' attitudes and intervention strategies. *Research in Education*, *69*(1), 27-35. doi.org/10.7227/RIE.69.3